AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the following listing of all claims:

1. (Currently amended) A method of operating a computing system:

periodically determining a temperature associated with an integrated circuit;

operating the integrated circuit with a first performance state as a maximum performance state ~~according to the determined temperature~~, the first performance state being one of a plurality of performance states available at [[the]] a first determined temperature;

switching to a second performance state as the maximum performance state when the temperature associated with the integrated circuit exceeds a first temperature threshold; and

switching back to the first performance state as the maximum performance state when the temperature associated with the integrated circuit is determined to be below a second temperature threshold lower than the first temperature threshold.

2. (Currently amended) The method as recited in claim 1 wherein the integrated circuit operates at multiple performance states within [[a]] respective temperature ~~range~~ ranges associated with the determined temperatures ~~temperature~~.

3. (Currently amended) The method as recited in claim [[1]] 2 wherein a number of performance states available for operating the integrated circuit varies according to the determined temperature.

4. (Currently amended) The method as recited in claim 1 wherein a number of performance states available decreases when the determined temperature crosses above [[a]] the first temperature threshold.

5. (Original) The method as recited in claim 1 wherein each performance state is defined by at least one of an operating voltage and frequency of the integrated circuit.

6. (Original) The method as recited in claim 1 wherein each performance state is defined at least in part by how much of the integrated circuit is being utilized.

7. (Original) The method as recited in claim 1 wherein the integrated circuit is a processor.

8. (Cancelled)

9. (Cancelled)

10 (Cancelled)

11. (Currently amended) The method as recited in claim 1 further comprising switching to a third ~~second~~ performance state as the maximum performance state when the temperature is determined to be below a third ~~predetermined~~ temperature threshold lower than the first and second temperature thresholds and wherein the ~~second~~ third performance state is a higher performance state than the first performance state.

12. (Cancelled)

13. (Cancelled)

14. (Currently amended) A computing system comprising:

an integrated circuit operable at multiple performance states, the performance states being defined by at least one of operating voltage and frequency;

and wherein the computing system provides that the integrated circuit, at a first detected temperature, has a first maximum performance state and a first plurality of lesser performance states; and wherein at a second detected temperature, higher than the first detected temperature, the integrated circuit has a lower maximum performance state and a second plurality of lesser performance states, the lower maximum performance state providing lower performance than the first maximum performance state in terms of maximum power consumption; and

wherein the lower maximum performance state is one of the first plurality of lesser performance states.

15. (Original) The computing system as recited in claim 14 further comprising:

a temperature detection mechanism coupled to detect a temperature associated with the integrated circuit; and

wherein the computing system is operable to change to a different maximum performance state according to the detected temperature.

16. (Original) The computing system as recited in claim 15 wherein the detected temperature is one of ambient temperature, junction temperature, case temperature, or die temperature.

17. (Original) The computing system as recited in claim 15 wherein a higher detected temperature results in a lower maximum performance state.

18. (Original) The computing system as recited in claim 15 wherein the number of performance states available varies according to the detected temperature.

19. (Original) The computing system as recited in claim 15 wherein the integrated circuit is a processor.

20. (Currently amended) A computer program product encoded in at least one computer readable medium, the computer program product comprising:

a plurality of groups of performance operating states, each of the groups of performance operating states having a different maximum operating state, the groups of operating states corresponding to respective different temperature ranges related to operation of a processor; and

an instruction sequence executable to change to a different group of performance operating states and thereby a different maximum operating state according to a detected temperature associated with the computer system; and wherein a

maximum operating state of one group of performance operating states is available as an operating state in another group.

21. (Original) The computer program product of 20, wherein the at least one computer readable medium is selected from the set of a disk, tape or other magnetic, optical, or electronic storage medium and a network, wire line, wireless or other communications medium.

22. (Currently amended) A computing system comprising:

means for determining a temperature associated with a processor, the processor having a plurality of groups of performance states associated with each of a plurality of temperature ranges, each of the groups having a different maximum performance state and common lower performance states, and wherein a maximum operating state of one group of performance operating states is available as an operating state in another group; and

means for changing from a first group of performance states available in which to operate to a second group of performance states according to the determined temperature, thereby changing the available maximum performance state available for processor operation.

23. (Cancelled)

24. (New) A method of operating an integrated circuit comprising:

in a first temperature range varying an operating state of the integrated circuit within a first plurality of performance states, the first plurality of performance states having a first performance state as a maximum state;

in a second temperature range varying the operating state of the integrated circuit within a second plurality of performance states having a second performance state as the maximum state, the second performance state being a lower performance state than the first performance state; and

in a third temperature range varying the operating state of the integrated circuit within a third plurality of performance states having a third performance state as the

maximum performance state, the third performance state being lower than the second performance state;

wherein each of the performance states in the first, second, and third pluralities of performance states are defined by at least one of operating voltage and operating frequency; and

wherein the operating state of the integrated circuit is varied in each of the first, second, and third temperature ranges according to integrated circuit utilization.

25. (New) The method as recited in claim 24 wherein the third performance state is one of the performance states in the first and second pluralities of performance states and wherein the second performance state is one of the performance states of the first plurality of performance states.

26. (New) The method as recited in claim 24 wherein one or more lower performance states in each of the first, second, and third plurality of performance states is identical.

27. (New) The method as recited in claim 24 wherein the operating states of the third plurality of performance states is a subset of the plurality of operating states associated with the first and second temperature ranges.